Federal Emergency Management Agency

Washington, D.C. 20472

APR 16 1982

MEMORANDUM FOR: Brian Grimes
Director
Division of Emergency Preparedness
U.S. Nuclear Regulatory Commission

FROM: Richard W. Krimm
Assistant Associate Director
Office of Natural and Technological Hazards

SUBJECT: Calvert Cliffs Nuclear Power Plant
Exercise Report for November 17, 1981
Exercise

Attached herewith is an Exercise Report prepared by the Region III RAC listing the Observations and Recommendations on the November 17, 1981 exercise. Although not stated in the report, the RAC Chairman has indicated that the State and counties demonstrated an ability to protect the health and welfare of its citizens in the event of an incident at Calvert Cliffs.

The FEMA Region III staff met with the State on April 12, 1982 to review the changes made to the Plans as a result of the exercise of November 17, 1981.

If you have any questions regarding this matter please contact Vernon E. Adler, Chief, Technical Hazards Division at 287-0200.

Attachment

Federal Emergency Management Agency

Region III 6th & Walnut Streets Philadelphia, Pennsylvania 19106

January 11, 1982

MEMORANDUM FOR: Members, Regional Assistance Committee, Region III
Members, Federal Observation Team

FROM: Steven A. Adukaitis, Chairman
Regional Assistance Committee

SUBJECT: Calvert Cliffs Nuclear Power Plant - Exercise Report for November 17, 1981 Radiological Emergency Preparedness Exercise (Calvex 81)

Attached for your information is a copy of the Observations and Recommendations report on the REP exercise held at Calvert Cliffs on November 17, 1981.

Please contact me if you have any questions.

Attachment

ATTACHMENT

Regional Assistance Committee - Region III
Observations and Recommendations

Calvert Cliffs Nuclear Power Plant
November 17, 1981

NOTIFICATION AND ALERTING

State

Notification from the utility to the State Emergency Operations Center (EOC) appeared to function smoothly throughout the exercise with the use of the dedicated hotline that has been established between the plant, the State EOC, the Accident Assessment Center (AAC) and the three plume zone counties. The procedures utilized were those established in the plan with calls before duty hours routed through the Maryland State Police to the appropriate officials at Maryland Emergency Management and Civil Defense Agency (MEM&CDA). All information was recorded on standard forms.

Both the actual notification of the MEM&CDA staff and State agencies' liaison to the EOC as well as the activation of the EOC occurred in a timely manner, with one exception. This was noted by the operations officer who assured that the situation was rectified.

Notification of state officials at the Maryland Department of Health and Mental Hygiene's (DH&MH) Accident Assessment Center (AAC) was not observed, but discussions with emergency personnel indicated that all had been notified in a timely manner. The information communicated to these individuals (AAC Management) appeared to be deficient however, in that they only knew th Calvert Cliffs had declared an Unusual Event and Alert at specified times but did not know the specific initiating conditions for these classifications.

Calvert County

The "red phone" a dedicated telephone line between the county EOC and the utility was used to notify County EOC staff of all developments at the plant. All changes of events at the utility, including protective action recommendations, were promptly relayed to county by utility. Also used extensively was State teletype to communicate between State and County.

The Emergency Management Coordinator (EMC) notified the EOC staff by telephone. Emergency workers such as police and fire personnel also were notified by telephone although they could have been contacted by radio during duty hours. Notification and alerting was timely and quick. Telephone "fan-out" system worked well where used for alerting and activating emergency workers.

Siren system and EBS were used properly, although one siren experienced a mechanical failure. State Police also conducted route surveys in the simulated evacuated areas to check for people who may not have "gotten the word."

St. Mary's County

The county has an excellent Communications Center where all messages are received and logged. The center does all calling by using the SOP which was readily available. The leaders of each group of emergency workers were responsible for alerting and call-in of their group. The public was alerted by use of siren, one of which experienced a mechanical failure and the EBS. The EBS was actually aired once and simulated by the local station at other times. Route alerting was accomplished by a well coordinated effort of the Sheriff and Maryland State Police. Door to door alerting was performed.

Dorchester County

Officials and staff were notified via the telephone at all levels. The telephone operation was limited due to the fact that some personnel were told to be present at the EOC, prior to the exercise, at a certain time. Therefore, in some instances, the telephone system was simulated.

After site emergency was declared, the emergency workers of the county were notified via phone by their specific agency chief in the operations room of the EOC. No problems were visible. Phones were not tied up; even though additional jacks have been requested it is not necessary.

There is a problem with the siren system. When it was sounded at 9:12 a.m., many evacuees and members of the fire department on Taylors Island explained that they could not hear the sirens indoors. This concern was confirmed at the EOC at the conclusion of the exercise. The one siren at Meekens Neck did not function. Because of the siren problem, the sheriff's department performed route alerting using their audio capability of their vehicles. This demonstrated a back-up system that did not impede the evaucation procedure.

It should also be noted, the Natural Resource Police completed route alerting in the bay to warn boaters and other crafts. This demonstrated capability took approximately 45 minutes.

Recommendations:

1. The design of the siren system for the ten-mile EPZ should be reviewed to determine whether siren placement and coverage is adequate. Additional testing of the system also should be performed.

DIRECTION AND CONTROL

State

The MEM&CDA EOC served as a very functional facility for managing and coordinating the State response. The physical layout provided for easy coordination among the various participants as well as clear access to all critical information displayed on status boards or maps. Security was excellent throughout the day with one, and many times two people located at the locked entrance (the only access to the EOC). A log was maintained and anyone admitted was required to wear a badge.

Large-scale maps were utilized to show significant items such as evacuation routes, access control points, assembly areas, hospitals, mass care centers, etc. On one map colored lights were used to signify radiation levels and areas affected, among other things. A status board was maintained and kept up-to-date in a prompt manner (with some exceptions), as well as a resource chart, showing those items the state agencies had provided to other jurisdictions.

The governor came to the State EOC and was given a thorough briefing on the status of the emergency response and declared a State of Emergency in the plume zone counties. In most cases, state agencies relied on technical experts to handle their response rather than the Secretaries themselves.

Overall coordination at the State EOC rested with the MEM&CDA's Operations Officers. The various state agencies coordinated among themselves, informing the Operations Officer once a decision had been reached. The Director, MEM&CDA was involved in all critical decisions. Protective actions were discussed at the EOC prior to their implementation, thus allowing for any necessary input. Contact was maintained with all major parties to insure coordination was taking place between jurisdictions and in order that everyone had up-to-the-minute data. After discovering early on that information from outside sources had not been relayed to him, the Operations Officer instructed his staff to keep him advised.

Plans were available and appeared to be utilized wherever necessary.

The DH&MH EOC appeared to be well-staffed and capable of 24-hour operations with minimum loss in effectiveness.

With respect to the AAC itself, however, the technical staff was very limited with a maximum of two individuals capable of technical assessment. As a result the director of the AAC was also the individual relied on to do or review dose calculations and technical reviews and was not able to devote a major portion of his time to direction, control, assessment, and decision making. He was tied up with many mundane tasks also as a result of lack of staffing, further detracting from his command and control tasks. Coordination between the AAC and DH&MH and facility was excellent regarding decision making. The 24-hour staffing of the AAC with the present AAC organization configuration and staffing does not appear possible.

Emergency Operations Facility

In the early stages of the exercise, security at the licensee's near-site Emergency Operations Facility (EOF) was too lax in that one observer (without proper identification) was able to gain entrance by "talking his way in." Access to the EOF was not physically blocked by a fence, gate or similar mechanical device but was manned only by unarmed guards. Unauthorized access easily could have been obtained by driving past the guards. This could result in serious security problems.

The EOF appeared crowded during the exercise with congestion in all rooms as well as in the hallways. Identification of key individuals was difficult because of this congestion coupled with the fact that name tags were not commonly used.

Information flow within the EOC followed no discernible pattern. At varying times, information was exchanged by written messages, verbal messages, general announcements to everyone in the EOF or small coordinating conferences. Very few written messages appeared to have been circulated. A uniform and consistent message distribution system is needed.

A number of status boards were established and well used early in the exercise but use of them became erratic later in the day. Some of this may be attributable to the possibility of redundancy among them.

For this exercise, the state monitoring teams were controlled by DH&MH staff positioned in a van parked outside the EOF building. This arrangement resulted in a need for "runners" who would relay information from the van to the state technical liaison people located in the building. The van itself is in poor shape lacking adequate writing space, heating and air conditioning and lights for night use.

Calvert County

The EOC facility was too small and cramped, but well utilized. Sufficient staff was present to provide back-up and staffing rotation. Security was excellent; three police officers manned all access points to EOC.

Internal information exchange was excellent. All messages were written on four copy forms, and all messages were logged, copies were distributed to the Coordinator, and to the Public Information Officer (PIO). Numerous verbal briefings were conducted. Status board and maps were excellent.

Public official support was excellent. Two County Commissioners participated fully; one in the EOC for Evacuation decision making, the other as the County spokesman in the media center.

The EMC exhibited excellent coordination and management decision-making. He utilized the EOC staff fully, and assigned many routine duties to his assistant. Plans were utilized, readily available, and understood.

St. Mary's County

The EOC is ideal. There is plenty of room, adequate equipment, and support facilities (food, santiation, etc.). Access to the EOC is controlled by a locked door with television cameras for identification. A media room is provided outside the locked door for interface with the press and electronic media.

All messages are recorded and distributed to the indicated recipient and a copy to the Director for his information. Display boards are kept current regarding status and to show reported radiation readings. The President of the Board of Commissioners was in attendance throughout the exercise and made appropriate decisions when required. The direction and control of the EOC and county response was clearly handled by the CD Director as specified in the SOP. The county plans and SOPs were in evidence and were used by the participants.

Dorchester County

The Dorchester County EOC was a more than adequate facility. Designated and separated operation room, support area, and communications rooms, allowed for the vital centralized direction and control to handle the emergency situation. Displays and maps were abundant, including those designed to work with the scenario.

24-hour staffing was a problem. While many agencies demonstrated an existence of more than one person at the EOC, the CD Director had no apparent relief. His relief was to come from the RADEF officer who also did not have a viable and capable back-up person. The RADEF Officer should be commended for his thoroughness and familiarity with all phases of the operation.

Security at the EOC for access to the center was physically non-existent. Personnel did check those that entered the EOC, but there was no formal procedure.

The internal exchange of information went quite well. Operation chiefs shared information face-to-face and the group was often briefed promptly by the director of any events or changes. All this information was then plotted to allow for viewing. Public official support was tremendous. Every member of the Board of County Commissioners was present and actively participated in message information and even route alerting.

The Civil Defense Director along with his RADEF Officer had a complete understanding of their emergency plan. Each agency used the annexes and checklists of the plan to insure coordination and decision-making.

Recommendations

2. All oral messages should be promptly transferred to a status board or be put into written copy and distributed to guard against error.

3. At the MEM&CDA EOC, provide large scale maps concerning population distribution and, possibly, radiation monitoring points.

4. Because of the lack of space on the status board at the MEM&CDA EOC, the "out of date" messages that have been recorded by the operations staff should be provided to the other state agency representatives.

5. Review current AAC management structure and resources and consider reconfiguring current technical/management resources into at least two 12-hour shifts. Additionally, consider the call in of federal and other support personnel much earlier to provide specific support in the assessment area.

6. Increase staff size to relieve the AAC director of non-direction/control decision making tasks.

7. Consider co-location of the AAC and the DH&MH EOC to put decision makers in close contact with each other without removing the respective managers from their groups.

8. Back-up personnel for each Calvert County EOC staff person should be designated formally in the SOPs.

9. At Dorchester County, additional personnel should be designated and trained in order to provide 24-hour capabilities for all positions.

10. Security and access control measures at the Dorchester County EOC should be improved.

ACCIDENT ASSESSMENT

A. Dose Calculations, Projection, Coordination

Accident assessment was performed at the AAC located in downtown Baltimore in coordination with liaison personnel located at the EOF. In addition, the utility had one or more technical representatives at the AAC at all times. Communications between the two locations was by the "red phone" hot line and by two unpublished commercial phone lines.

The major problem experienced at the AAC was the lack of timely and accurate technical data upon which to base decisions which, in part, resulted from "inappropriate" use of the red phone. The data transmitted from the EOF to the AAC over that instrument was of general and non-technical nature. The "technical" information transmitted was often so general in nature that it was essentially useless for plant status (operational assessment). Additionally, a number of technical errors occurred in the data received and posted at the AAC and never were recognized or corrected.

The AAC did perform well in posting, evaluating and projecting doses based on an assessment of the radiological data it did receive through use of the utility-supplied computer from which the AAC can access plume direction and projection based on wind direction and speed at atmospheric stability. The AAC, through good use of radios, also was able to receive utility field monitoring data at the same time as the utility. Communications with state monitoring teams was not possible. Decisions were well thought out and coordinated with appropriate groups. However, recommendations on protective measures were based almost entirely on radiological projections and lacked consideration of the operational status and prognosis for the power plant itself.

Dose projection calculations performed by the utility and state personnel at the EOF often did not correspond with each other and differed, in at least one case, by a factor of ten. In some cases, the different dose models in use gave projections differing by a factor of approximately 100.

The senior state representative at the EOF appeared to be grossly overworked as did the DH&MH official in the monitoring team communications van.

B. Monitoring

Four monitoring teams (white, blue, orange, green) are operated by the state. For this exercise, the white and blue teams were observed. The teams were dispatched from Baltimore to Calvert County, a trip of 75 minutes. However, Calvert County was uncertain whether the teams would report to the county health center or the EOC. When the teams arrived at the EOC at 8:30 a.m., they did notify the county health officer of their arrival.

State vans were well-equipped with radiation detection equipment and instruments which were recently calibrated and were maintained. Check sources were used to verify operability. Communications between the mobile units and the EOF were adequate; however, one team member was weak in radio procedures. The teams had adequate supplies of anti-contamination clothing, decontamination supplies and respiratory equipment.

Air sampling was adequate as was the sample monitoring and conversion capability. Liquid sampling was not observed. Monitoring data forms were well designed.

Maps used were detailed enough to provide accurate locations of sampling points. However, a difference was noted between the grid system used by the utility and that used by the state teams.

Plume monitoring was well directed by the state personnel in the van at the EOF although it was observed that a monitoring team once was sent into an area of potentially high radiation without specific warnings about this. Also observed at the EOF was one case where the senior state representative in the EOF did not understand the grid coordinates in data brought to him by a runner from the van outside. Different forms to record data from the monitoring team were used by the state and the utility at the EOF.

Recommendations

11. The AAC should receive more timely and accurate technical (operational as well as radiological) data from the EOF. This can be accomplished by providing a direct line to the EOF for sole transmission of technical information. The line should be manned at both ends by technically-versed individuals who can communicate on a technical level. At the AAC, a speaker box should be installed so that state and utility personnel can listen and can evaluate/question the data received.

12. Better use of the utility-supplied dose projection computer should be made. The utility should supply the AAC with a "slave" of their MIDAS which would provide the AAC with "hard copy" of real time projections as calculated at the EOF. This arrangement also would speed the receipt of data/projections at the AAC and insure reliability of data.

13. Assessment and data verification can be improved, especially during the early hours of an accident when full activation of emergency organizations is not complete, through contact with the Nuclear Regulatory Commission regional office which has two "hot lines" from the plant for health physics/radiological data and operational data, respecitvely.

14. Co-location of the current AAC staff at the near-site EOF should be considered. This would help to eliminate the communications and data/information transmission problems which exist with the current arrangement.

15. Accident assessment and resultant protective action recommendation should consider plant operational factors as well as radiological data and dose projections. Liaison with the utility Technical Support Center (TSC) should be established to secure this essential information.

16. The functions and responsibilities of the state representatives at the EOF, particularly that of the senior representative, should be reviewed and clarified to relieve the overworked nature of those positions. Additional staff or better delegation of work among existing staff should be considered.

17. The use of the communications van to receive state field monitoring data and then forward the data to the EOF via a "runner" is an unacceptable arrangement. The new EOF should be designed to allow co-location of all state personnel. In the interim, the communications equipment should be moved into the EOF building and the runner system eliminated.

18. Both the state and utility should practice and drill, both separately and jointly, their dose assessment methodology so as to improve their individual and joint capabilities.

19. State monitoring teams should receive basic training in proper communications techniques and procedures.

20. The utility and state monitoring teams both should use a unified map grid system.

21. Appropriate warning information should be provided to monitoring teams prior to entrance to potentially high radiation areas.

EXPOSURE CONTROL

The Maryland state plan calls for the predistribution of potassium iodide (KI) for emergency workers, but this had not occurred prior to the exercise. Distribution then was simulated as was the ingestion of it, although in most jurisdictions there appeared to have been little clear, specific criteria on when to use it. For example, the State radiation monitoring team simulated taking KI right after notification, Dorchester County simulated distribution and instructed workers to await further directions, but gave none, and workers in Calvert County were instructed to take it before going out when ingestion may not have been warranted.

Radiation monitoring and decontamination points were established by all three plume exposure counties although St. Mary's County only simulated decontamination because the high school (the decontamination center) was in session. The monitoring personnel in St. Mary's County appeared knowledgeable in procedure but the Dorchester County monitoring personnel lacked formal radiological monitoring training. Activities at the Calvert County points were not observed. It should be noted that in Dorchester County the decontamination center was set up in the field house of the high school whereas future decontamination will be performed in the vocational school located adjacent to the high school.

Dosimetry: In general the three plume zone counties followed their system for issuing dosimetry and maintaining records for emergency workers. However, only Calvert County possessed any TLDs, approximately 100, which had been supplied by the utility. Both the state radiation monitoring teams and the state ingestion pathway team had proper dosimetry. In all three counties, all of the police

officers and highway department personnel involved in access control had dosimeters. However, in St. Mary's County, dosimetry was limited to the CD-type dosimeters; no TLDs were observed. During the evacuation, the bus drivers in Calvert and Dorchester Counties had proper dosimetry (St. Mary's County was not observed).

Access Control: In St. Mary's County, two main access control posts were apparently activated on a standby basis prior to 8:30 a.m. At one of these posts (Tom Parran Road and Maryland 2/4), the Maryland State Police (MSP) officer was observed at 9:00 a.m. actually stopping traffic. He was notifying motorists of the exercise and advising them that in a real emergency they would be turned back. An explanatory brochure prepared by the MSP Prince Frederick Barracks was provided. Since the accident had not yet even progressed to the Site Emergency Level, the officer's actions were very premature, suggesting either overzealousness or erroneous or unclear instructions.

Over the course of the next hour, five other access control points were observed (three in Calvert, two in St. Mary's). All had at least one MSP or sheriff's officer. Discussion with the officers indicates that they were dispatched from their appropriate headquarters at 8:30 - 8:45 a.m., arriving on site at 8:45 - 9:15 a.m. Maryland DOT trucks had delivered appropriate traffic control devices to all but one of these posts. Except as previously noted, the personnel at these access control posts realized that they were to stand-by and not establish the post until ordered.

As the exercise progressed, the DOT observer discovered several additional traffic control posts in Calvert County, apparently established in response to the specific scenario of the exercise "accident." At two of these posts, Lusby and St. Leonard, the officers had traffic control devices in place on the roadway and were stopping traffic. Since by this time the accident had advanced to General Emergency, these actions were correct. It is not known if additional posts were also established in St. Mary's County as the exercise continued, or if all the posts in Calvert County were observed.

Later in the afternoon, a FEMA observer reviewed the access control demonstration in Dorchester County. She reported that four of the six posts listed in the county plan were actually established. In all cases, proper traffic control devices were in place.

Overall, the demonstration of access control in Calvert and Dorchester Counties is considered excellent. The access control in St. Mary's County was adequate. However, the limited number of posts (2 of 18 shown in the plan) was certainly not a vigorous test of capability and performance.

Ingestion Pathway: The professional staff dealing with Ingestion Pathway monitoring, especially the Ingestion Pathway Manager located at the AAC, performed well, were well-trained in working with their equipment, understood their SOPs and followed them exactly. Five state monitoring teams can be deployed with additional teams from the counties adding personnel for continuous operations.

For this exercise, one team composed of two individuals was deployed to collect soil and leafy vegetable samples from three separate, pre-identified sites in

St. Mary's County. Dairy and meat tissue samples were not taken. Team members appeared knowledgeable in sampling methods and SOPs were followed precisely. Communications with the Ingestion Pathway Manager were poor in that commercial telephones were needed. This involved extensive driving around to secure a phone.

Samples were taken to the Central Lab of DH&MH in Baltimore for analysis. The observer was told that the AAC Director is responsible for determining sample analysis priorities and sensitivity requirements for the lab, but this was not observed. No comments can be made about laboratory capabilities in that they were not exercised.

Recommendations:

22. Predistribution of potassium iodide (KI) for emergency workers as provided for in the state plan should be performed as expeditiously as possible.

23. Clear, specific criteria for use of KI by emergency workers should be developed and instructions provided to all levels of emergency workers.

24. Individuals performing radiological monitoring should receive proper, formal training.

25. St. Mary's and Dorchester Counties should secure an adequate supply of TLDs for their emergency workers.

26. Ingestion pathway monitoring teams should secure radios for their vehicles.

27. A check should be made to insure that written procedures and criteria exist for assigning analytic priorities and sensitivities for ingestion pathway samples brought to the DH&MH lab.

28. In future exercises both milk and meat samples should be taken; laboratory capabilities also should be exercised.

PROTECTIVE ACTIONS

The decision-making process leading up to the implementation of protective actions, i.e. evacuation, was demonstrated adequately. The AAC in conjunction with the DH&MH and the utility showed the ability to make decisive recommendations via "red phone" conference calls which for the first time involved the State EOC. All parties at the EOC felt this was an important innovation and expect to formalize this process by inserting it into the REP plan. Once evacuation measures were underway, however, feedback to the AAC and DH&MH on the status of evacuation measures was judged to be poor.

During the exercise the Red Cross opened an office in Upper Marlboro to coordinate the Red Cross response. The relationship of this office to the entire mass care operation was not clear, however.

Calvert County

Within 15 minutes after the declaration of General Emergency, Calvert County had dispatched two school buses to standby at one of the bus assembly areas

designated in the plan, Southern Middle School. The drivers were called at their homes, where their buses are normally kept both during the day and at night, and had no advance notice. The decision to evaucate areas up to five miles from the plant in the southwest direction was made at about 12:30 p.m. A school supervisor in a radio-equipped car arrived at about 12:35 p.m. He provided the drivers with general information, route and pickup instructions, and dosimeters. Routes were selected based on the exercise scenario and were actual routes not composites. This briefing took about 10 minutes. Some of the instructions could have been provided in advance, thereby shortening the response time.

The first bus left the school at 12:45 p.m. The bus travelled a route along Sollers Road, picking up five volunteer "evacuees." Because the driver had to stop at each volunteer's home and knock on the front door, the pickup consumed about 20 minutes. This is probably a reasonably accurate representation of the actual travel time for this route in a real emergency.

The second bus, destined for the Long Beach/Calvert Beach area, departed the assembly point at 1:05 p.m. Based on the southwesterly plume direction, this area was in less danger than the Sollers Road area. Therefore, the second bus was delayed to represent the "second round" of the bus evacuation plan. The bus took nearly an hour to pick up seven volunteers. As on the first route, the driver had to stop at virtually every pickup point to arouse the "evacuees." At over half these points, there was no response, adding to the travel time. However, this time was probably representative of the actual time, given the population density, complex road network, and narrow, winding streets in the Long Beach neighborhood. The RAC observer was later informed that several buses would be assigned to traverse this area in an actual event to reduce pickup time. Further, in a real accident, the warning sirens would have been sounded and EBS messages broadcast, alerting residents to prepare for evacuation. This, too, would probably reduce pickup time. Following completion of their pickups, the buses travelled to the Evacuation Assembly Area at the fire house in Prince Frederick for monitoring and possible decontamination.

The evacuation demonstration in Calvert County was realistically done and was good training for the school personnel and residents involved. Further, the simulation was probably adequate to disclose any major flaws in the plan (there were none). However, the scope - only two buses on two routes - was somewhat limited as a demonstration of the county's capability for responding promptly to an accident with sufficient resources for evacuation of residents.

The Calvert County Evacuation Center was operated by the Red Cross through a Center Manager with registration handled by the County Department of Social Services. Neither of these agencies had a representative at the County EOC, however. Communications between the center and the EOC was by commercial telephone, but the center's phone was located away from the area operations. Messages were transferred through the use of a runner.

The Center Manager was familiar with Red Cross procedures but did not seem to be aware of the overall county plan and the complicated interagency arrangement. When a television crew arrived he answered all their questions. Some questions related to county operations and should have been referred to the EOC staff. Supply and feeding capabilities were well handled.

The Evacuation Center is located less than one mile outside the 10 mile EPZ which is inconsistent with NUREG 0654.

St. Mary's County

The bus evacuation in St. Mary's County was not observed by the RAC. However, the RAC observer was informed that the demonstration would consist of only one bus travelling a single, composite route. This being the case, the response capability and resources of the county could not really be accurately evaluated.

The St. Mary's County Evacuation Center was under the direction of a representative of the Department of Education with support services provided by the Red Cross and County Department of Social Services. In contrast to Calvert County, the latter two organizations did have representation at the County EOC. Communications again were by commercial telephone. Feeding and supply problems were adequately met. The leadership at the Evacuation Center was excellent as was the work of and the cooperation among the agencies there.

Discussions with agency representatives at the EOC and the evacuation center revealed that no one knew the total number of evacuees which would arrive at the center in a real incident. Thus, it could not be determined whether the designated center would be adequate to meet the expected demand or whether additional facilities would be necessary. This appears to be a planning issue as opposed to an exercise item, but the concept is crucial and needs to be addressed.

Dorchester County

In Dorchester County, the small EPZ population at risk is concentrated along only one main road and a few side streets. Therefore, only one bus route would be run in a real evacuation, although more than one bus would probably be used. For the exercise, a single bus was dispatched when the evacuation was ordered and traversed the designated route. Nine volunteer evacuees were picked up and transported to the Evacuation Center in Cambridge. The bus evacuation demonstration in Dorchester County was judged adequate, both in scope and execution, given the miniscule population involved.

The Evacuation Center is more than adequate. The facility could house 2,000 people comfortably, although a maximum of only 300 people could be expected in a real incident. Food on hand at the facility can feed 300-400 people for a three week period. The registration function requires additional personnel to handle an evacuation larger than that demonstrated.

Recommendations:

29. Feedback on the status of implementation of protective actions should be requested by and given routinely to the AAC and the DH&MH.

30. The Red Cross role and lines of communication should be more fully defined and the chapters and divisions should explain their system to both state and local governments so the resources of the organization can be completely utilized.

31. In Calvert County, the advance briefing for the school bus drivers at the bus assembly area took longer than necessary. Some of the more general procedural instructions could be provided in advance, perhaps through periodic training sessions.

32. A new evacuation center for Calvert County residents should be designated and should be located at least 5 miles beyond the EPZ as called for in NUREG 0654.

33. The total evacuation figures and the resultant resource requirements should be calculated in St. Mary's County and a determination should be made as to whether the designated evacuation center is adequate to meet those needs.

34. Additional personnel to assist in the registration of evacuees at the Dorchester County evacuation center should be obtained.

35. A system should be developed for handling television interviews at evacuation centers. Evacuees should not be subjected to the press without their permission and center managers should defer questions on county operations to county EOC staff.

36. Future exercises should interject messages concerning mass care supply needs at the Evacuation Center level as they would be in an actual situation, and not at the county level. This would give the county additional play and decision-making and would generate communications to other centers from the county EOC.

COMMUNICATIONS

The primary communications link among all major participants was the dedicated "ring-down" circuits. The utility EOC and EOF had three call directions with conference capability to the following locations: St. Mary's County, Dorchester County, Calvert County, State EOC (Pikesville), AAC, Plant TSC and Plant Control Room. This system was used extensively by the EOF to disseminate plant status and other information to the State and County facilities, either individually or in combination as the situation dictated.

The MEM&CDA provided a van to communicate with the State Radiological monitoring teams using an emergency State Police frequency of 44.90 MHZ. Deficiencies with the van itself and its location vis-a-vis the EOF have been discussed previously. (See Direction and Control). The utility provided their own system on 153 MHZ for direction and control of their teams (numbered) in the field (both ground and air).

It was noted that the state people at the AAC had no direct communications with their ingestion zone sampling people. This deficiency is admitted by the state and equipment to meet this requirement has been programmed.

Communications from the counties to the State and vice versa was primarily on the State CD radio teletype network - this was effective since it is in normal day-to-day use and people are familiar with it. Within the counties, either RACES or REACT or both were used from the EOCs to the evacuation centers for

coordination. In Dorchester County, a radio failed and commercial telephone was used to communicate with the evacuation center. Site to field unit communications also was accomplished by RACES, REACT, police, fire and other similar existing local networks.

In summary, communications were quite adequate and effectively utilized.

PUBLIC INFORMATION

Public information functions were coordinated by a Public Information Officer (PIO) and staff located in the state EOC in Pikesville and with an assistant PIO in the Media Center located at the County Fairgrounds in Prince Frederick. All state agencies with emergency responsibilities provided PIOs at the EOC to support the overall effort.

All public information releases were coordinated through the lead PIO as well as with the proper MEM&CDA operations staff. Coordination of operations between the EOC and the Media Center also was excellent as was the interface with plume zone county operations. County PIOs also performed their functions well.

The Emergency Broadcasting System (EBS) was activated in proper and coordinated fashion and messages providing timely public emergency information were transmitted as needed.

The Media Center possessed excellent accommodations for the media and utility and governmental staff. Ample telephones for media use were available; recording, broadcasting and other electronic equipment were provided. All personnel appeared knowledgeable and conducted themselves with competence. State press releases were delivered orally, however, and "hard" copy was not available.

Rumor control was a function that appeared to be the responsibility of county governments. The function was performed to varying degrees at this level, but more on an "ad hoc" as opposed to an organized basis.

Recommendations

37. Signs should be posted to direct media representatives to the Media Center.

38. "Hard" copy of state press releases should be provided to the media at the Media Center.

39. Each plume zone county should structure their rumor control measures in a more organized fashion. Rumor control phone numbers also should be given out to the public via the media.

SCENARIO

The exercise scenario appeared to be appropriate in testing all major response capabilities of the MEM&CDA, state agencies with representatives at the EOC and plume zone county government and organizations. Some areas such as recovery and reentry were not demonstrated to any significant degree and must be dealt with in future exercises. Although many of the canned messages were designed so as to

test the response capabilities of certain agencies or to pose a problem which required solution, some of them were true "prompting" messages which instructed people to act or think instead of allowing free play. Other messages, such as those related to supply [illegible]s for mass care, could have been interjected at a more appropriate level. These were not serious deficiencies, however.

It should be noted that, as presented to the RAC, none of the three county plans include any detailed information on evacuation bus routes, bus resources required, pickup procedures, etc. While this is a deficiency in the plan, rather than the exercise, it did severly hamper the RAC observer's preparation for and evaluation of the evacuation demonstration. Further, to the RAC observer's knowledge, there was no demonstration of the evacuation procedures for the handicapped and other impaired persons in any of the three counties. This is a serious gap in the exercise scenario.

A serious flaw in the entire exercise was the fact that two of the plume zone counties (St. Mary's and Dorchester) had obtained copies of the "Restricted" scenario which were seen by RAC observers at the EOCs. In fact, Dorchester County participants had been briefed the Thursday before the exercise using the exact details of the restricted scenario (a fact substantiated by agency heads at the EOC) and on exercise day were questioning why messages had not come at the "proper" time. The credibility of the performance of these counties will justifiably be questioned because of this fact. However, their more-than-satisfactory performance could not have been achieved in the few short days during which they possessed the scenario. Although tainted, the overall exercise results remain valid and acceptable.

Recommendations

40. In future exercises, strenuous efforts should be made to ensure that participants do not obtain copies of the "Restricted" scenario.

41. Future exercises should demonstrate untested areas such as Recovery and Reentry and others noted in this report.